

Numerical Calculations of Terrestrial Planet Formation

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We describe numerical calculations of terrestrial planet formation using a hybrid multiannulus coagulation + n -body code. The code allows us to follow the collisional evolution of cm to m sized bodies into terrestrial mass planets and an associated debris disk. Our numerical simulations form terrestrial mass planets in 1–10 Myr at 0.5–2 AU. As rocky planets grow, they stir up leftover planetesimals along their orbits. The resulting cascade of collisions produces a debris disk. With current facilities, the infrared excess of the debris is visible for 10–30 Myr. Planned facilities such as TPF/Darwin may be sensitive enough to detect structure in the debris, including wakes from terrestrial planets.

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